

II. CLAIM AMENDMENTS

1. (Previously Presented) A method in a receiver for determining a reference level for automatic gain control of the receiver for a radio frequency signal to be received, the signal having a varying signal strength, said method comprising:

receiving radio blocks in said receiver on a logical packet data traffic channel of the signal, which radio blocks have been transmitted with a predetermined transmission power and by using a predetermined way of controlling the transmission power,

determining continuously said reference level on the basis of correctly received valid radio blocks of the logical packet data traffic channel, and

correcting said reference level on the basis of the signal strength measured during the reception of each valid radio block.

2. (Previously Presented) A method according to claim 1, comprising:

correcting the reference level by calculating a running average of the reference level with respect to time.

3. (Previously Presented) A method according to claim 2, comprising:

calculating the running average by using filtering with a variable length, wherein a period, during which the running average is calculated, is substantially constant, depending on the frequency of occurrence of the valid radio blocks.

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4. (Previously Presented) A method according to claim 2, comprising:

calculating, by using the running average, a predetermined number of the valid radio blocks as a forgetting factor.

~~6~~ 5. (Previously Presented) A method according to claim 1, comprising:

receiving a signal of a broadcasting channel, which signal of the broadcasting channel has been transmitted at a predetermined constant transmission power, and
correcting the reference level on the basis of a signal strength of the broadcasting channel measured during the reception of the signal of the broadcasting channel, if the valid radio block has not been received during a predetermined period of time.

~~6~~ 6. (Previously Presented) A method according to claim ~~5~~, comprising:

calculating a running average of the signal strength of the broadcasting channel with respect to time.

~~6~~ 7. (Previously Presented) A method according to claim ~~6~~, comprising:

calculating filtering with a variable length by using the running average of the signal strength of the broadcasting channel.

~~8~~ 8. (Previously Presented) A method according to claim ~~5~~, wherein said broadcasting channel is the BCCH channel of the GPRS network.

~~9~~ 9. (Previously Presented) A method according to claim ~~5~~, comprising:

determining the signal strength of the broadcasting channel by using samples taken from the signal of the broadcasting channel.

~~10~~ 10. (Previously Presented) A method according to claim 1, comprising:

selecting, for the determination, such valid radio blocks which are received at intervals of a predetermined period, for synchronization of the receiver and a communication network.

11. (Previously Presented) A method according to claim ~~5~~⁶, wherein said predetermined period of time is a period comprising 18 successive radio blocks in the GPRS network.

12. (Previously Presented) A method according to claim ~~5~~⁶, comprising:

compensating, on the basis of a transmission power information contained in the valid radio block, the measured signal strength of the radio block to a predetermined level which is proportional to the signal strength of the broadcasting channel, when the transmission power of the radio blocks vary.

13. (Previously Presented) A method according to claim 1, comprising:

interpreting information and transmission power information contained in the valid radio block to determine a recipient of the radio block and the transmission power used, respectively.

14. (Previously Presented) A method according to claim ~~13~~¹⁶, comprising:

selecting, for the determination, such valid radio blocks which are addressed to a specific recipient and which contain transmission power information, when the transmission power varies between recipients and the transmission power of the radio blocks vary.

15. (Previously Presented) A method according to claim ~~13~~¹⁶, comprising:

selecting, for the determination, such valid radio blocks which are addressed to different recipients and which contain transmission power information, when the transmission power remains the same among recipients and the transmission power of the radio blocks vary.

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~~16.~~ (Previously Presented) A method according to claim 1, comprising:

selecting, for the determination, such valid radio blocks which are addressed to different recipients, when the transmission powers remains the same among recipients and the transmission power of the radio blocks remain constant.

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~~17.~~ (Previously Presented) A method according to claim 1, comprising:

correcting the reference level on the basis of the maximum signal strength measured from incorrectly received radio blocks, if, within a predetermined period of time, no valid radio blocks have been received during the maximum interval of occurrence of reference blocks.

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~~18.~~ (Previously Presented) A method according to claim 1, comprising:

correcting the reference level by a predetermined value, when clipping has occurred in the reception of the valid radio block when the signal strength is below a set minimum limit or above a set maximum limit.

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~~19.~~ (Previously Presented) A method according to claim 1, comprising:

receiving radio blocks on two or more logical packet data traffic channels, which radio blocks have been transmitted at a predetermined transmission power and by using a predetermined method of transmission power control, and

determining continuously said reference level on the basis of valid radio blocks and for each of said logical packet data traffic channels.

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~~20.~~ (Previously Presented) A method according to claim 1, comprising:

using a wireless communication unit to receive the valid radio blocks transmitted by a base transceiver station of a packet switched communication network based on a cellular system.

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~~21.~~ (Previously Presented) A method according to claim ~~20~~, comprising:

measuring the signal strength of an analog signal received in said wireless communication unit, and

correcting the signal gain on the basis of the determined reference level.

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~~22.~~ (Previously Presented) A method according to claim 1, wherein said logical packet data traffic channel is the PDTCH/D channel of the GPRS network.

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~~23.~~ (Currently Amended) A method according to claim 1, wherein said predetermined way is constant power control used by the GPRS network in downlink data transmission, power control according to mode A, which has a limited variation in output power, or power control according to mode B, which has a whole range variation in output power.

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~~24.~~ (Currently Amended) A device in a receiver for determining a reference level for automatic gain control of the receiver for a radio frequency signal to be received, the signal having a varying signal strength, said device comprising:

a circuit means for receiving in said receiver, on a logical packet data traffic channel of the signal, radio blocks which have been transmitted with a predetermined transmission power and by using a predetermined way of controlling the transmission power,

a circuit means for continuous determination of said reference level on the basis of correctly received valid radio blocks of the logical packet data traffic channel, wherein said circuit means are arranged is configured to correct said reference level on the basis of the signal strength measured during the reception of each valid radio block.

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~~25.~~ (Currently Amended) A device according to claim ~~24~~, wherein the device further comprises:

a circuit means for receiving a signal of a broadcasting channel, which signal of the broadcasting channel has been transmitted at a predetermined constant transmission power, and wherein said circuit means are is further configured arranged to correct the reference level on the basis of a signal strength of the broadcasting channel measured during the reception of the signal of the broadcasting channel, if the valid radio block has not been received during a predetermined period of time.

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~~26.~~ (Currently Amended) A device according to claim ~~24~~, wherein the device further comprises:

a circuit means for measuring the signal strength of a received analog signal, wherein said circuit means are is further configured arranged to correct the signal gain on the basis of the determined reference level at predetermined intervals.

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~~27.~~ (Original) A device according to claim ~~24~~, wherein said device is a wireless communication unit operating in the GPRS network.

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~~31~~ 28. (Currently Amended) A device according to claim ~~25~~, wherein the device further comprises:

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a circuitmeans for measuring the signal strength of a received analog signal, and wherein said circuitmeans are-is further configuredarranged to correct the signal gain on the basis of the determined reference level at predetermined intervals.

~~29.~~ ⁴ 29. (Previously Presented) A method according to claim 3, comprising:

calculating, by using the running average, a predetermined number of the valid radio blocks as a forgetting factor.

~~30.~~ ¹³ 30. (Previously Presented) A method according to claim ~~5~~, comprising:

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selecting, for the determination, such valid radio blocks which are received at intervals of a predetermined period, for synchronization of the receiver and a communication network.

~~31.~~ ¹⁵ 31. (Previously Presented) A method according to claim ~~10~~, wherein said predetermined period of time is a period comprising 18 successive radio blocks in the GPRS network.

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~~32.~~ ¹⁶ 32. (Previously Presented) A method according to claim ~~10~~, comprising:

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compensating, on the basis of a transmission power information contained in the valid radio block, the measured signal strength of the radio block to a predetermined level which is proportional to the signal strength of the broadcasting channel, when the transmission power of the radio blocks vary.

~~33.~~ ¹⁷ 33. (Previously Presented) A method according to claim ~~10~~, comprising:

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interpreting address information and transmission power information contained in the valid radio block to determine a recipient of the radio block and the transmission power use, respectively.

34. (Previously Presented) A method for determining a reference level for automatic gain control of a radio frequency signal to be received, the signal having a varying signal strength, said method comprising:

receiving radio blocks on a logical packet data traffic channel of the signal, which radio blocks have been transmitted with a predetermined transmission power and by using a predetermined way of controlling the transmission power,

determining continuously said reference level on the basis of correctly received valid radio blocks of the logical packet data traffic channel, and

correcting said reference level on the basis of the signal strength measured during the reception of each valid radio block;

receiving a signal of a broadcasting channel which signal of the broadcasting channel has been transmitted at a predetermined constant transmission power, and

correcting the reference level on the basis of a signal strength of the broadcasting channel measured during the reception of the signal of the broadcasting channel, if the valid radio block has not been received during a predetermined period of time,

wherein said predetermined period of time is a period comprising 18 successive radio blocks in the GPRS network.

35. (Previously Presented) A method for determining a reference level for automatic gain control of a radio frequency signal to be received, the signal having a varying signal strength, said method comprising:

receiving radio blocks on a logical packet data traffic channel of the signal, which radio blocks have been transmitted with a predetermined transmission power and by using a predetermined way of controlling the transmission power,

determining continuously said reference level on the basis of correctly received valid radio blocks of the logical packet data traffic channel,

correcting said reference level on the basis of the signal strength measured during the reception of each valid radio block; and

correcting the reference level on the basis of the maximum signal strength measured from incorrectly received radio blocks, if, within a predetermined period of time, no valid radio blocks have been received during the maximum interval of occurrence of reference blocks.

36. (Previously Presented) A method for determining a reference level for automatic gain control of a radio frequency signal to be received, the signal having a varying signal strength, said method comprising:

receiving radio blocks on a logical packet data traffic channel of the signal, which radio blocks have been transmitted with a predetermined transmission power and by using a predetermined way of controlling the transmission power,

determining continuously said reference level on the basis of correctly received valid radio blocks of the logical packet data traffic channel,

correcting said reference level on the basis of the signal strength measured during the reception of each valid radio block; and

correcting the reference level by a predetermined value, when clipping has occurred in the reception of the valid radio block when the signal strength is below a set maximum limit or above a set maximum limit.

37. (Previously Presented) A method for determining a reference level for automatic gain control of a radio frequency signal to be received, the signal having a varying signal strength, said method comprising:

receiving radio blocks on a logical packet data traffic channel of the signal, which radio blocks have been transmitted with a predetermined transmission power and by using a predetermined way of controlling the transmission power,

determining continuously said reference level on the basis of correctly received valid radio blocks of the logical packet data traffic channel,

correcting said reference level on the basis of the signal strength measured during the reception of each valid radio block;

receiving radio blocks on two or more logical packet data traffic channels, which radio blocks have been transmitted at a predetermined transmission power and by using a predetermined method of transmission power control, and

determining continuously said reference level on the basis of valid radio blocks and for each of said logical packet data traffic channels.

38. (Previously Presented) A method for determining a reference level for automatic gain control of a radio frequency signal to be received, the signal having a varying signal strength, said method comprising:

receiving radio blocks on a logical packet data traffic channel of the signal, which radio blocks have been transmitted with a predetermined transmission power and by using a predetermined way of controlling the transmission power,

determining continuously said reference level on the basis of correctly received valid radio blocks of the logical packet data traffic channel,

correcting said reference level on the basis of the signal strength measured during the reception of each valid radio block; and

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selecting, for the determination, such valid radio blocks which are received at intervals of a predetermined period, for synchronization of the receiver and a communication network,

wherein said predetermined period of time is a period comprising 18 successive radio blocks in the GPRS network.